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(54) Cosmetic composition

(57) An oil phase composition which  
is easily emulsifiable with water  
comprises a polyhydroxy compound, a

fatty acid, a fatty alcohol, an ester,  
surfactants, and a preservative. A  
child's cosmetic kit comprises at least  
one container of the oil phase  
composition.

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SPECIFICATION  
Cosmetic composition

This invention relates to cosmetics, and more particularly to an oil phase composition for use in a cosmetic kit which can be used to prepare a wide assortment of cosmetic products.

Young children delight in observing the actions of adults and attempting to duplicate them. By doing so they learn a great deal about their environment and accepted patterns of behavior. One of the areas which typically fascinates young girls in particular is cosmetics and the application of cosmetics to the skin. While a parent may be perfectly willing to allow the child to satisfy her curiosity, the disadvantages of commercially available cosmetics typically are a stumbling block. These disadvantages include the expense of buying separate cosmetics for the child to use, the possibility that the cosmetics may contain ingredients which will stain clothing or other objects the cosmetics come in contact with, and the possibility that the cosmetic may contain ingredients which are not safe if ingested.

Accordingly a need exists for a cosmetic kit which allows a young child to prepare a variety of cosmetics inexpensively, which are readily washable, and are safe and simple enough for young children to use.

The present invention is an oil phase composition for use in a cosmetic kit. The oil phase composition is easily emulsifiable with water and can be mixed with other cosmetic additives to provide a wide assortment of cosmetics which are safe to use, washable and do not stain the skin or mucous membranes. The oil phase composition comprises a polyhydroxy compound; a fatty acid; a fatty alcohol; a cosmetic ester; a preservative; and a combination of surfactants having different HLB (hydrophilic-lipophile balance) values such that the surfactants, when added to the other ingredients in an appropriate ratio, provide a stable, low melting, easily emulsified oil phase.

The oil phase composition of the present invention is a careful balance of ingredients intended to promote easy, stable emulsion formation, fulfill many cosmetic functions depending on the amount and type of additives, enhance washability of any pigments which may be incorporated, and be safe and simple enough for young children to use.

The first ingredient of the oil phase composition is a water soluble polyhydroxy compound such as propylene glycol, glycerin, or a water soluble polypropylene glycol typically at a concentration between about 20% and about 30% by weight. The second ingredient is a fatty acid typically having from about 14 to about 18 carbon atoms, typically at a concentration between about 10% and about 15% by weight, a preferred fatty acid being triple pressed stearic acid. Another ingredient of the oil phase composition is a fatty alcohol typically having from about 14 to about 18 carbon atoms, typically at a concentration

65 between about 10% and about 15% by weight, a preferred fatty alcohol being cetyl alcohol. Another ingredient of the oil phase composition is a cosmetic ester such as isopropyl palmitate, or isopropyl stearate, typically at a concentration 70 between about 10% and about 15% by weight, a preferred ester being isopropyl myristate. The oil phase composition also contains a hydrophilic surfactant having an HLB between about 14.5 and about 17 and a lipophilic 75 surfactant having an HLB between about 4.5 and about 7, the total surfactant concentration typically being between about 10% and about 30% by weight, and the HLB of the surfactants when combined being between about 10.0 and 80 about 11.5, preferably about 10.9. A preferred pair of surfactants is polyoxyethylene (20) sorbitan monopalmitate and sorbitan monopalmitate.

The final ingredient of the oil phase is a cosmetically acceptable preservative which does not materially interact with the other ingredients in the oil phase composition to significantly reduce its antimicrobial activity and also is substantially nontoxic even if taken internally by a child.

Preferred preservatives are methyl *p*-hydroxy 90 benzoate, propyl *p*-hydroxy benzoate, and imidazolidinyl urea. The preservative is added at a relatively high concentration so that the formulation may later be admixed with a substantial amount of water and still inhibit 95 multiplication of microorganisms. The preservative is typically employed in concentrations from about 0.1% to about 4.0% by weight depending upon the solubility of the particular bactericide.

While not wishing to be bound by theory, it is believed that the above components of the oil 100 phase composition function in the following manner. The polyhydroxy compound and the surfactants are employed at a fairly high concentration to promote subsequent low energy 105 emulsification with water. Also, the fatty acid and fatty alcohol combine to prevent each other's crystallization thereby reducing the energy input required for melting. The cosmetic ester further lowers the melting point of the fatty acid and fatty 110 alcohol. The combination of these ingredients is balanced to provide a stable, low-melting (i.e. up to 105°F) easily-emulsified oil phase.

To enhance the versatility of a kit of the present invention, it is preferred that such a kit contain 115 more than one container of the oil phase composition, one container being of the composition above, the others incorporating varying degrees of pigment up to a maximum of about 7% by weight. By mixing together varying 120 amounts of the oil phase compositions from each of the containers, it is possible to vary the color of the oil phase composition and thereby the color or shade of cosmetic produced after emulsification with water. Suitable pigments for use in oil-and-water and water-and-oil emulsions are well known to those skilled in the art, a common brownish-red color containing 4 percent red iron oxide and 3 percent titanium dioxide by weight being an example of the type of pigments which

may be used.

Depending on the concentration and specific gravity of pigments added to the oil phase, it may be desirable to incorporate a suspending agent.

- 5 Preferred such ingredients are stearalkonium Hectorite, and fumed silica by hydrated silica or other organophilic gellants may also be used. Such cosmetically acceptable thickening and suspending agents are well known to those skilled
- 10 in the art, and may be incorporated up to about 3 percent by weight. When stearalkonium hectorite is used it must be dispersed with propylene carbonate or other polar organics.
- 15 While oil phase compositions of the present invention are designed to melt at low temperatures (i.e. up to 105°F), they are able to suspend the heaviest of pigments at temperatures up to 135°F. Furthermore, emulsions made with oil phase compositions of the present invention do
- 20 not break down at temperatures between 0°F and 130°F.

The following procedure is an exemplary method for compounding the oil phase. The fatty acid, fatty alcohol, and preservatives are melted

- 25 together in a vessel equipped for high speed mixing. The cosmetic ester (or, where required, the stearalkonium hectorite predispersed in the ester and propylene carbonate) is stirred into the melt. The surfactants and then the polyhydroxy
- 30 compound are poured or sifted into the vortex of the stirring liquid. Agitation is continued until the mixture's temperature drops to 130°F.

When a pigment is to be added, a preferred method is to disperse the colorant in some of the

- 35 glycol and surfactant, the resulting paste is mixed into the melt.

If suspending agents other than stearalkonium hectorite are used, different mixing procedures may be required. Fumed silica, for example, should

- 40 be predispersed in the polyhydroxy compounds and surfactants before being added to the melt.

Cosmetics are prepared by the user simply by stirring the appropriate amount of water into the oil. For example, basic creams and lotions are

- 45 made by mixing approximately equal quantities of (tepid) water and oil. Mixing can be done with a spatula in about one minute. Then, up to 4 more parts of water may be added to produce a lighter creme or a lotion. The appearance and/or function
- 50 of the cosmetic may be modified further by adding FD&C dyes and/or perfume and incorporating other ingredients such as borax or sorbitol. Facial cosmetics are made with a pigmented oil phase. The user emulsifies the pigmented oil and water to
- 55 produce cosmetics such as a lip gloss, eye shadow, or creme rouge. By mixing the different colored oils in varying proportions, intermediate shades may be produced.

The cosmetic kit according to the present

- 60 Invention can contain a number of other items as desired. For instance a typical kit might contain one container of the oil phase composition without any pigmentation, two or more containers of oil phase composition each having a different
- 65 concentration of pigment therein, an instruction

booklet explaining how to prepare sample cosmetics, a container for mixing the various ingredients, means for stirring the ingredients in the container, and if desired, other containers of

- 70 food colorings sorbitol, borax, glycerine, and fragrance. All these items may be contained in a box having individual compartments for each of the items mentioned above. Furthermore, if desired, a mirror may be attached to the interior of
- 75 the lid of the box to allow the user to apply the cosmetic after preparation.

The following specific examples are intended to illustrate more fully the nature of the invention without acting as a limitation upon its scope.

#### 80 EXAMPLE 1

An oil phase composition for use in the present invention was prepared as follows. 13.7 pounds of triple pressed stearic acid, 13.7 pounds of cetyl alcohol, 2.9 pounds of methyl p-hydroxy benzoate and 0.3 pounds of propyl p-hydroxy benzoate are melted together in a vessel equipped for high speed mixing. 1.5 pounds of stearalkonium hectorite (which has been predispersed in 13.3 pounds of isopropyl myristate and

- 90 0.5 pounds of propylene carbonate) is uniformly blended into the melt. Next, 18.3 pounds of polyoxyethylene (20) sorbitan monopalmitate, 10.8 pounds of sorbitan monopalmitate, and 25 pounds of propylene glycol are poured into the
- 95 vortex of the stirring liquid. Agitation is continued until the temperature drops to 130°F. The oil phase composition is then put into containers which are placed into the kit.

#### EXAMPLE 2

100 An oil phase composition is produced according to the procedures set forth in Example 1 above except that 4 pounds of red iron oxide and 3 pounds of titanium dioxide are added to the surfactants and propylene glycol.

#### 105 EXAMPLE 3

A typical cleansing cream is produced by stirring together 10 grams of the oil phase composition of Example 1 and 10 grams of lukewarm water for about 1 minute. Then

- 110 10 grams of a 4% by weight solution of borax in water is blended into the emulsion. Finally, 0.1 grams of a water miscible fragrance is added. The cleansing cream produced thereby is then used in a normal manner.

#### 115 EXAMPLE 4

A cream rouge is produced as above by stirring together 10 grams of the oil phase composition of Example 2 with 15 grams of water for about 1 minute until a smooth cream is produced.

120 Fragrance may be added, if desired.

Other embodiments of the invention will be apparent to those skilled in the art from a consideration of the specification or practice of the invention disclosed herein. It is intended that the specification and the examples be considered as exemplary only, with the true scope and spirit of

the invention being indicated by the following claims.

#### CLAIMS

1. An oil phase composition easily emulsifiable with water for use in a cosmetic kit, said oil phase composition comprising:
  - a) a water soluble polyhydroxy compound;
  - b) a fatty acid;
  - c) a fatty alcohol;
  - d) an ester;
  - e) a preservative; and
  - f) a hydrophilic surfactant and a lipophilic surfactant.
2. An oil phase composition as claimed in claim 1 wherein said polyhydroxy compound is selected from the class consisting of propylene glycol, glycerine, and water soluble polypropylene glycols; said fatty acid is a carboxylic acid having from about 14 to about 18 carbon atoms; said fatty alcohol has from about 14 to about 18 carbon atoms; said ester has from about 14 to about 18 carbon atoms; said hydrophilic surfactant has an HLB between about 14.5 and about 17; and said lipophilic surfactant has an HLB between about 4.5 and about 7.
3. An oil phase composition as claimed in claim 2 wherein said hydrophilic and said lipophilic surfactants are combined in appropriate amounts to have a combined HLB of between about 10.0 and about 11.5.
4. An oil phase composition as claimed in any preceding claim wherein said oil phase composition further includes a pigment.
5. An oil phase composition as claimed in any preceding claim wherein said oil phase composition further includes a suspending agent.
6. An oil phase composition as claimed in any preceding claim wherein said polyhydroxy compound is present between about 20% and about 30% by weight, said fatty acid is present between about 10 and about 15% by weight, said fatty alcohol is present between about 10% and about 15% by weight, said ester is present between about 10% and about 15% by weight, said hydrophilic surfactant and said lipophilic surfactant are present in a total concentration of between about 10% and about 30% by weight, and said preservative is present between about 0.1 and about 4.0% by weight.
7. An oil phase composition as claimed in any preceding claim wherein said hydrophilic surfactant of said oil phase composition is polyoxyethylene (20) sorbitan monopalmitate, and said lipophilic surfactant of said oil phase composition is sorbitan monopalmitate.
8. An oil phase composition as claimed in claim 5, wherein said suspending agent is stearalkonium hectorite.
9. An oil phase composition as claimed in any preceding claim wherein said fatty acid is triple pressed stearic acid, said fatty alcohol is cetyl alcohol, and said ester is isopropyl myristate.
10. A cosmetic kit comprising at least one container of an oil phase composition easily emulsifiable with water, as claimed in any preceding claim.
11. A cosmetic kit as claimed in Claim 10 further including at least one container of an additive selected from the class consisting of food colorings, sorbital, borax, glycerine, and fragrance.
12. A cosmetic kit as claimed in Claim 10 or Claim 11, wherein at least two containers of oil phase composition containing pigment are present, each of said containers containing a different concentration of pigment such that mixing them in various ratios will produce various shades of color.
13. A cosmetic kit as claimed in any one of Claims 10 to 12, further including an instruction booklet explaining how to prepare various cosmetic products.
14. A cosmetic kit as claimed in any one of Claims 10 to 13, further including a container for mixing various ingredients, and means for stirring said ingredients.
15. A cosmetic composition comprising water and an appropriate amount of the oil phase composition according to any one of Claims 1 to 9.
16. A cosmetic composition as claimed in Claim 15 wherein the ratio of water to oil phase composition is from 1:1 to 5:1.
17. A cosmetic composition as claimed in Claim 15 or Claim 16 further including cosmetically acceptable additives.
18. A cosmetic composition as claimed in any one of Claims 15 to 17 wherein said additives are selected from the class consisting of food colorings, sorbital, borax, glycerin, and fragrance.
19. A method of preparing a cosmetic composition comprising mixing together water and the oil phase composition according to any one of Claims 1 to 9.
20. A method of using the cosmetic kit of any one of Claims 10 to 14, comprising mixing together water and an appropriate amount of oil phase compositions and applying the resulting emulsion to the skin.
21. An oil phase composition substantially as hereinbefore described.
22. A cosmetic kit substantially as hereinbefore described.